

**ANTIMICROBIAL ACTIVITY OF THAI MEDICAL HERBAL
EXTRACTS AGAINST *MUTANS STREPTOCOCCI* AND
CANDIDA ALBICANS IN VITRO**

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ABSTRACT

Head and neck cancer is a potentially life-threatening disease and maxillofacial prosthodontists have important roles in rehabilitation of the patients who were suffered from this cancer. *Candida* infection is one of the most common and potentially serious complication in patients who are exposed to chemotherapeutic agents and/or radiation. The effect of these conjunctive cancer therapies causes a reduction in saliva flow, and increases in the amount of dental caries and fungal infection which are major complications in this group of patients. Local herbal products in Thailand contains some substances that may have potential benefit in antimicrobial activities. This study focused on antimicrobial activity of herbal essential oils from plants such as plai, mint, guava, hairy basil, clove and lemongrass and the combination of these herbal essential oils against *Mutans streptococci* and *Candida albicans*. Six individuals and seven combinations of essential oils were prepared and evaluated for the antimicrobial activity of essential oils by using disk diffusion test and agar dilution test to determine Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC).

Each individual and combination showed various activities against test microorganisms. *Candida albicans* exhibited a higher response than *Mutans streptococci* to each individual oil and combination of essential oils. For MIC and MBC determinations, Clove as single usage and Plai + Mint + Clove + Hairy basil in combination showed the highest antimicrobial activities in tested solutions. Combinations of herbal essential oil showed promising result for antimicrobial activity against *Mutans streptococci* and *Candida albicans*. Further study should be conducted in purifying extracts and evaluating an exact amount of concentration in each extract that can inhibit the growth of oral microorganism.

**KEYWORDS: HERBAL ESSENTIAL OIL/ MIC/ MBC/ *MUTANS STREPTOCOCC*/
*CANDIDA ALBICANS***